

Instruction & Guidelines for Writing a Quality Report

Each student is expected to submit an individual brief report for each computer assignment. The following must be included.

I. NEEDED ITEMS

- 1) **Title page:** Includes title of the computer assignment, your name, due date, etc.
- 2) **Introduction:** Briefly describe the purpose of the computer project and what will be accomplished/carried out.
- 3) **Theory:** Provide derivations and theoretical proofs for your solutions, algorithms, and explanation on how they are implemented, analyzed, and validated.
- 4) **Results and Discussions:** Briefly summarize your results (plots, images, tables, etc.) and provide key observations and findings.
- 5) **Conclusion:** Briefly summarize what was learnt in the project, and ways to improve the theory, process, and implementation.
- 6) **References:** Provide a list of references used for this project.
- 7) **Appendices:** Provide MATLAB scripts, if asked.

II. GENERAL GUIDELINES

The following guidelines are intended to outline what constitutes a quality lab report for this class. Even though you may be familiar with some or all of these guidelines, please read them carefully as adhering to them will not only increase your chances of receiving a better grade, but reinforce one of the most important skills that an engineer should possess: the ability to clearly describe his/her work.

A quality lab report will:

- 1) Not only provide the reader with meaningful results, but precisely describe the procedures employed and the reasoning behind their use. In other words, if the reader is proficient in the field of study the report addresses, he/she should be able to read your report, understand exactly what you did, and likely be able to reproduce your results with reasonable accuracy (often there will be randomness intentionally introduced in the experiment). Precise description of your methods is even more important than correct numerical results. Even precise descriptions of incorrect methods may have some merit, and hence, may still be worth some credit. Note that, e.g. simply writing what formula you used to calculate a result *may* be inadequate because there might still be some ambiguity about the procedure used.
- 2) Interpret the results by providing accompanying mathematical or intuitive reasoning behind them. For example, if a method that was used worked very well or very poorly you should be able to explain why. Similarly, when analyzing two competing methods, statements concerning their relative performance and the reasons behind it should be included.
- 3) Be structured in a way that makes it easy to read. Specifically, the report should be logically ordered so that it can be comprehended by reading it from front to back without constantly referencing disjoint sections. This also means that figures and equations should be embedded in line and appear shortly after the appropriate descriptive text (i.e. they should not be attached at the end of the report). Similarly, referencing code that is attached to the end of a report is not an acceptable way

to describe the procedure. In fact, code can and should be omitted altogether in most circumstances unless you are briefly mentioning a specific Matlab command that was used.

- 4) Cover all the necessary topics, but also be written concisely. You do not need to include a lot of fluff, anything that is not relevant to the experiment, or repeat things in the assignment description. A short introduction and conclusion to complement your procedure and results is adequate.
- 5) Use correct spelling and proper grammar.
- 6) Be typed in a word processor and not contain any handwritten sections; this includes equations, which should be embedded in line.

If there are any questions on the above, or you need help or suggestions on how to adhere to any of these guidelines, please do not hesitate to ask.